

## **ENERGY TRANSFER DYES WITH ENHANCED FLUORESCENCE**

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### **ABSTRACT**

Novel linkers for linking a donor dye to an acceptor dye in an energy transfer fluorescent dye are provided. These linkers facilitate the efficient transfer of energy between a donor and acceptor dye in an energy transfer dye. One of these linkers for linking a donor dye to an acceptor dye in an energy transfer fluorescent dye has the general structure  $R_{21}Z_1C(O)R_{22}R_{28}$  where  $R_{21}$  is a  $C_{1-5}$  alkyl attached to the donor dye,  $C(O)$  is a carbonyl group,  $Z_1$  is either NH, sulfur or oxygen,  $R_{22}$  is a substituent which includes an alkene, diene, alkyne, a five and six membered ring having at least one unsaturated bond or a fused ring structure which is attached to the carbonyl carbon, and  $R_{28}$  includes a functional group which attaches the linker to the acceptor dye.